

CLAIMS

What is claimed is :

1. A polyolefin resin composition for an automotive wheel cover comprising
5 40-75 wt.% of a high crystalline olefin resin, 3-25 wt.% of a polyolefin based elastomer, and 5-30 wt.% of an inorganic filler.
- 10 2. A polyolefin resin composition of claim 1, wherein said high crystalline olefin resin has a melt index of 10-80 g/10min and the propylene component has an isotactic pentad fraction of not less than 96%.
- 15 3. A polyolefin resin composition according to claim 1, wherein said high crystalline olefin resin is chosen from a copolymer, random copolymer and a mixture thereof between propylene and a small amount of another α -olefin chosen from an isotactic polypropylene, a propylene-ethylene copolymer, a propylene-1-butane copolymer, a propylene-1-hexene copolymer, and a propylene-4-methyl-1-pentene copolymer.
- 20 4. A polyolefin resin composition according to claim 2, wherein said high crystalline olefin resin is chosen from a copolymer, random copolymer and a mixture thereof between propylene and a small amount of another α -olefin chosen from an isotactic polypropylene, a propylene-ethylene copolymer, a propylene-1-butane copolymer, a propylene-1-hexene copolymer, and a propylene-4-methyl-1-pentene copolymer.
- 25 5. A polyolefin resin composition according to claim 1, wherein said polyolefin based elastomer has a Mooney viscosity ML_{1+4} (100 °C) of 10-100 and a comonomer content of 10-40 wt.%.

6. A polyolefin resin composition according to claim 1, wherein said polyolefin based elastomer is chosen from an ethylene-propylene copolymer rubber, an ethylene-propylene-dicyclopentadiene rubber, an ethylene-propylene-1,4-hexadiene rubber, an ethylene-propylene cyclopentadiene rubber, an ethylene-propylene-methylene-norbornane rubber, an ethylene-propylene-ethylidene-norbornane rubber, a hydrogenated styrene-butylene block copolymer (SEBS), a hydrogenated styrene-butadiene rubber (HSBR), astyrene-ethylene-butylene block copolymer (SEBC), a crystalline ethylene-butylene block copolymer (CEBC), or a mixture thereof.

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7. A polyolefin resin composition according to claim 5, wherein said polyolefin based elastomer is chosen from an ethylene-propylene copolymer rubber, an ethylene-propylene-dicyclopentadiene rubber, an ethylene-propylene-1,4-hexadiene rubber, an ethylene-propylene cyclopentadiene rubber, an ethylene-propylene-methylene-norbornane rubber, an ethylene-propylene-ethylidene-norbornane rubber, a hydrogenated styrene-butylene block copolymer (SEBS), a hydrogenated styrene-butadiene rubber (HSBR), astyrene-ethylene-butylene block copolymer (SEBC), a crystalline ethylene-butylene block copolymer (CEBC), and a mixture thereof.

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8. A polyolefin resin composition according to claim 1, wherein said inorganic filler is chosen from glass beads, barium sulfate, and a mixture thereof.

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9. A polyolefin resin composition according to claim 8, wherein said glass beads has an average particle diameter of 15-45 μm and is coated on the surface with a polypropylene grafted with unsaturated carbonic acid or its anhydride.

10. A polyolefin resin composition according to claim 8, wherein said barium sulfate has an average particle diameter of 0.5-1 μm .

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11. An automobile wheel cover comprising a polyolefin resin composition, said composition comprising:

between 40 and 75 wt.% of a high crystalline olefin resin having a propylene component that has an isotactic pentad fraction of not less than 96%,
5 wherein said high crystalline olefin resin has a melt index of 10-80 g/10min at 230 C;

between 3 and 25 wt.% of a polyolefin-based elastomer; and

between 5 and 30 wt.% of an inorganic filler comprising a first component with an average particle size between 15 and 45 μm and a second component with an average particle size between 05 and 2 μm .
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12. The automobile wheel cover of claim 11 wherein

the high crystalline olefin resin comprises polypropylene, a copolymer of propylene and less than about 20% of an α -olefin chosen from isotactic polypropylene, ethylene copolymer, 1-butylene, 1-hexene, or 4-methyl-1-pentene, or a mixture thereof, and
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the inorganic filler comprises glass beads having an average particle diameter of 15 to 45 μm and a second inorganic filler with an average particle diameter of 0.5 to 1 μm , and wherein the weight ratio of glass beads to the second inorganic filler is between about 6:1 to about 1:10.
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13. The automobile wheel cover of claim 12 wherein the second inorganic filler component comprises barium sulfate, and wherein the weight ratio of glass beads to the second inorganic filler is between about 2:1 to about 4:1.

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14. The automobile wheel cover of claim 11 wherein the inorganic filler comprises

glass beads having an average particle diameter of 15 to 45 μm , where at least a portion of the glass beads have been coated on the surface with a

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polypropylene grafted with unsaturated carbonic acid or its anhydride, and barium sulfate with an average particle diameter of 0.5 to 1 μm , wherein the weight ratio of glass beads to barium sulfate is between about 6:1 to about 1:10.

5 15. The automobile wheel cover of claim 12 wherein the glass beads have an average particle diameter of 20 to 40 μm and have been coated on the surface with a surface treatment that increases adhesion to the resin composition, wherein the weight ratio of the surface treatment to the glass beads is between 1:6 and 1:25.

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16. The automobile wheel cover of claim 13 wherein the glass beads have been coated on the surface polypropylene grafted with unsaturated carbonic acid or its anhydride, and wherein the weight ratio of glass beads to barium sulfate is between about 6:1 to about 1:10.

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17. The automobile wheel cover of claim 13 wherein the polyolefin based elastomer is chosen from an ethylene-propylene copolymer rubber, an ethylene-propylene-dicyclopentadiene rubber, an ethylene-propylene-1,4-hexadiene rubber, an ethylene-propylene cyclopentadiene rubber, an ethylene-propylene-methylene-norbornane rubber, an ethylene-propylene-ethylidene-norbornane rubber, a hydrogenated styrene-butylene block copolymer (SEBS), a hydrogenated styrene-butadiene rubber (HSBR), a styrene-ethylene-butylene block copolymer (SEBC), a crystalline ethylene-butylene block copolymer (CEBC), or a mixture of two or more thereof.

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18. The automobile wheel cover of claim 11 wherein the high crystalline olefin resin comprises polypropylene, a copolymer of propylene and less than about 20% of an α -olefin chosen from isotactic polypropylene, ethylene copolymer, 1-butylene, 1-hexene, or 4-methyl-1-

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pentene, or a mixture thereof, and

the inorganic filler comprises glass beads having an average particle diameter of 15 to 45 μm and a second inorganic filler with an average particle diameter of 0.5 to 1 μm , and wherein the weight ratio of glass beads to the second inorganic filler is between about 2:1 to about 4:1.

5 19. A polyolefin resin composition, said composition comprising:

between 40 and 75 wt.% of a high crystalline olefin resin having a propylene component that has an isotactic pentad fraction of not less than 96%,
10 wherein said high crystalline olefin resin has a melt index of 10 to 80 g/10min at 230° C;

between 3 and 25 wt.% of a polyolefin-based elastomer, wherein the elastomer is chosen from an ethylene-propylene copolymer rubber, an ethylene-propylene-dicyclopentadiene rubber, an ethylene-propylene-1,4-hexadiene rubber, an ethylene-propylene cyclopentadiene rubber, an ethylene-propylene-methylene-norbornane rubber, an ethylene-propylene-ethylidene-norbornane rubber, a hydrogenated styrene-butylene block copolymer (SEBS), a hydrogenated styrene-butadiene rubber (HSBR), a styrene-ethylene-butylene block copolymer (SEBC), a crystalline ethylene-butylene block copolymer (CEBC), or a mixture of two or more thereof; and

20 between 5 and 30 wt.% of an inorganic filler, wherein the inorganic filler comprises glass beads having an average particle diameter of 15 to 45 μm and a second inorganic filler component with an average particle diameter of 0.5 to 1 μm , wherein the weight ratio of glass beads to second inorganic filler component is between about 6:1 to about 1:10.

25 20. The polyolefin resin composition of claim 19 wherein the second inorganic filler component comprises barium sulfate, the weight ratio of glass beads to the second inorganic filler is between about 2:1 to about 4:1, and where at

least a portion of the glass beads have been coated on the surface with a polypropylene grafted with unsaturated carbonic acid or its anhydride.